Advancing Agriculture Education in Montana

A proposal related to the improvement of secondary Agricultural education programs in Montana.

Brief Description: Addressing the stability and improvement of Montana agricultural education programs through the implementation of the National Quality Program Standards.

Brief Summary:

- Provide base funding for schools to adopt a plan of program improvement.
- Provide incentive funding for exemplary programs.
- Provide assistance to communities that desire to launch new programs in agricultural education.
- Utilize existing Agricultural Education Specialist and State FFA Advisor to evaluate and administer Quality Program Standards funding.
- Address workforce needs related to Montana food and energy production.
- Address teacher shortages in agricultural education and retain quality teachers.

Background and Rationale

What is Agricultural Education?
Agricultural education programs are built on the three core areas of classroom/laboratory instruction, supervised agricultural experience programs, and FFA student organization activities/opportunities.

Yes, agricultural education classes offer traditional opportunities in livestock, crops, and Ag mechanics. However, we remain on the cutting edge of technology by teaching students skills in GPS and precision agriculture, science, engineering, education, and sales to name a few.

FFA continues to be the premier student organization for leadership and personal skill development. It is through the FFA that students learn to be productive citizens and participate in activities that reinforce why these students will be the leaders of tomorrow's agriculture industry.

SAE (supervised agricultural experience) is work-based learning at its best. Agricultural education programs are probably the only programs in our educational system that requires students to participate in work-based learning and keep track of financial records. AgEd promotes entrepreneurship, productive work habits, and the application of skills learned in class to the real world. In 2007, students in Montana's Agriculture Education programs reported that they earned nearly $1.5 million from entrepreneurship programs and over $1.9 million from productive job earnings. The $3.4 million represents earnings of over $800 per student from their supervised agricultural experience programs.

State of AgEd in Montana

There are currently 76 schools offering Agriculture Education classes with nearly 5,000 students enrolled. Nearly 2,800 of these students take advantage of what the FFA organization offers them. There would be over 80 AgEd programs if an ample supply of teachers were available to meet the demand this year.

Because of the added cost of having a Career and Technical program in a school, there is federal and state assistance which a school receives to help offset these added costs. For instance, the average amount a AA city (for all schools in that District) receives in federal Carl Perkins funding is $216,550, compared to $29,675 for Class A schools, $8,756 for Class B schools, and $2,738 for Class C schools. This funding is for all Career and Technical programs the school offers, not just agriculture education. Schools on our Indian Reservations receive an average of $31,278 in Perkins funding for all their CTE programs.

The State of Montana also provides additional help in funding CTE programs ($1,000,000 for 2008-09). Each CTE program generates a certain amount of funding for each school. Agriculture Education programs generate $221,896 of the total amount or about $6,500 per Class AA school, $3,500 per Class A school, $3,300 per Class B school, and $2,200 per Class C school. With 4,700 students in Montana AgEd programs, this financial help amounts to only $47 per student. The average high school AgEd instructor in Montana receives an extended contract of 25 days. The current funding amounts indicated above include a payment of about $45 a day for each extended contract day.

The State of Montana Office of Public Instruction, through the Division of Career, Technical, and Adult Education, provides for a State AgEd Specialist (Dr. Brad King in Helena) and a State FFA Advisor (Bill Jimmerson in Bozeman). Both positions have numerous responsibilities in keeping the AgEd profession current with the new education initiatives and maintaining the Montana FFA Association. Federal Carl Perkins money is used to finance the AgEd specialist position and a combination of Perkins (20%) and State money (80%) is used to finance the State FFA Advisor position. The $53,001 allotted for the total FFA Advisor position, including salary and operating expenses, has not been enough. Ideally, this position should include secretarial help for the State FFA Advisor, to free up time for that individual to have a presence state-wide, helping new teachers and providing leadership for the profession.

A concerted effort is needed to meet the challenges of increased costs, new program development, and the shortage of highly qualified agriculture education teachers. Agriculture education is leading the way with national initiatives promoting Career Pathways, Program Quality Standards, and Content Standards. These initiatives are creating a seamless educational path for students in agricultural education and, therefore, the need is there for state leaders with sufficient time and budgets to administer the initiatives.

National Efforts

A. 10 x 15: The Long Range Goal for Agricultural Education

By 2015 there will be in operation 10,000 quality agricultural science education programs serving students through an integrated model of classroom/laboratory instruction, experiential learning, and leadership and personal skill development. Further, all students will be members of the FFA and have a supervised agricultural experience that supports classroom and laboratory instruction.

Of the critical issues facing the nation, few are more compelling than improving the academic performance of public schools and ensuring a stable, safe and affordable food supply. Today agricultural education is positioned to contribute substantially in these arenas through a major national initiative.

Under the direction of The National Council for Agricultural Education, the "10x15 Long Range Goal for Agricultural Education" employs a comprehensive strategy engaging eight high-priority initiatives. The focus of the unprecedented effort is two-fold: create new programs in communities not yet served by agricultural education and FFA, and ensure the quality and high performance of current programs providing personal, academic and career education in agriculture. While the goal of "10x15" is to grow the number of agricultural education programs from 7,200 to 10,000 by the year 2015, the clear emphasis is on quality.

Several factors make this effort timely and essential. First, the public's expectations for higher student achievement are leading to dramatic increases in accountability, standards, rigor and relevance throughout education. Especially critical is the need to raise math and science proficiency. Second, the industry of agriculture, already concerned about meeting growing domestic and global demands for food and fiber, is eager to identify the future managers, leaders and workers who will ensure the future security and productivity of agriculture. A forecasted shortage of well-educated workers is adding urgency to the issue. Also, concerns about food safety, security and independence are registering at the highest levels of agribusiness and government. Lastly, local communities are intent on cultivating leadership and securing effective participation from their citizens. Through the intra-curricular programs of agricultural education and the FFA, a half-million students are developing skills in leadership, communication, team building and civic engagement.

B. National Quality Program Standards (NQPS)

Agricultural education is addressing accountability of its programs through the National Quality Program Standards. Montana is one of ten states in the nation pilot testing these standards which are a result of a need to provide consistent delivery of high quality agricultural education programs across the nation focused on relevant instruction, rigorous goals, continuous program improvement and the development of essential skills for student success. It is the adoption of the NQPS that will bring the most positive impact on all secondary agricultural education programs in Montana.

C. National Curriculum Content Standards

Standards for curriculum content in Agricultural Education have been established and cross-walked with academic standards in English, math, science, and social studies. Furthermore,

eight pathways of agricultural career interest have been identified to facilitate students in a seamless educational system from high school through post-secondary education.

Advancing Agricultural Education Legislative Proposal:

Amount: $500,000

$500,000 for the biennium to be included in the Office of Public Instruction, Career, Technical and Adult Education Division for:

a. A payment of $1,000 to each agricultural education program which completes the National Program Quality Standard evaluation and submits to the OPI AgEd specialist a "plan of improvement." Cost: **$76,000** if all AgEd programs complete the evaluation survey.

b. A payment of up to $2,000 annually to each AgEd program which submits a detailed budget to increase the quality of the AgEd program based on the "plan of improvement." Cost: **$304,000** if all AgEd programs participate.

c. An incentive of up to $15,000 per school to add Agricultural Education to the curriculum and recruit and retain an endorsed agricultural education teacher. Cost: **$75,000**

d. Administration of the components to improve agricultural education in Montana will Cost: **$45,000** to be used by both the AgEd Specialist in Helena and Bozeman, as needed, for program on-site help. Each participating program will receive a minimum of one on-site visit.

Montana Agricultural Education in 2009

Agricultural Education in Montana has utilized state and national initiatives to organize programs for the future. Keeping in mind that all students are identifying their own career pathway early in their high school career, each of these students need a curriculum which will provide them with the skills they will need along the way to being a productive employee in their chosen career field.

Any student who chooses the **Agricultural, Food and Natural Resources Career Cluster** should then have access to an agricultural education program offering classes which will take them down the Career Pathway they have chosen. Agricultural Education has been divided into eight career pathway options for students. They are:

1. **Agribusiness Systems** - the study of business principles, including management, marketing and finance, and their application to enterprises engaged in Agriculture, Food and Natural Resources.
2. **Animal Systems** - the study of animal systems, including life processes, health, nutrition, genetics, management and processing, through the study of small animals, aquaculture, livestock, dairy, horses and/or poultry.
3. **Environmental Service Systems** - the study of systems, instruments and technology used in waste management and their influence on the environment.
4. **Food Products and Processing Systems** - the study of product development, quality assurance, food safety, production, sales and service, regulation and compliance, and food service within the food science industry.
5. **Natural Resources Systems** - the study of the management of soil, water, wildlife, forests and air as natural resources.
6. **Plant Systems** - the study of plant life cycles, classifications, functions, structures, reproduction, media and nutrients, as well as growth and cultural practices, through the study of crops, turf grass, trees and shrubs and/or ornamental plants.
7. **Power, Structural & Technical Systems** - the study of agricultural equipment, power systems, alternative fuel sources and precision technology, as well as woodworking, metalworking, welding and project planning for agricultural structures.
8. **Biotechnology Systems** - (being developed)

In order to assure that each Agricultural Education program is providing similar skills for each student, a set of **content standards** has just been adopted for each career pathway.

Within each pathway, the standards are organized as follows:

1. ***Pathway Content Standard***—This is a general statement indicating the broad area of knowledge covered in each pathway.
2. ***Performance Elements***—These represent the major topical areas within each pathway. Generally, each pathway has 5 to 10 Performance Elements.
3. ***Performance Indicators***—These are more precise statements that serve as an indication of the knowledge/ability the student should possess.
4. ***Measurements***—These are sample measurable activities that students might carry out to indicate attainment of each Performance Indicator. The measurements are broken into three levels as follows:
    a. *Level I*—These are fundamental activities/abilities students possess at roughly the 9th- and 10th-grade levels upon which all other activities are built.

b. *Level II*—These are activities/abilities that will build on the first-level knowledge and are skills that students possess at roughly the 11th- and 12thgrade levels.
c. *Level III*—These are activities/abilities that will build in complexity from the first two levels and are skills students possess at roughly the 13th- and 14th grade levels. These skills may be obtained at the end of the high school level in more focused programs, in which case articulation agreements with postsecondary institutions are encouraged.

In order for each Agricultural Education program to provide the content standards it needs for the students enrolled, each program must be evaluated and a program of improvement (if needed) put in place. Six standards have been identified as components of a quality agricultural education program. These are the **National Program Quality Standards,** and include:

1. Program Design and Instruction
2. Experiential Learning
3. Leadership Development
4. School and Community Partnerships
5. Certified Agriculture Teachers and Professional Growth
6. Program Planning and Evaluation

The final step in providing the skills for the career pathway a student chooses is the actual curriculum offered. Agricultural Education in Montana is currently preparing a new curriculum for 9th and 10th grade students and will complete the 11th and 12th grade curriculum by the end of 2010.